

REMARKS

Claims 30, 43, 46 and 48 have been amended. Claim 45 has been canceled. New claim 49 has been added. Claims 30-44, 46, 48 and 49 are now pending. Applicant reserves the right to pursue the original claims and other claims in this and other applications.

The Amendment that was filed on December 28, 2004 is objected to under 35 U.S.C. § 132 (new matter). The Office Action asserts that "without etching said substrate" is not adequately supported by the original disclosure. Reconsideration is respectfully requested. In the embodiment shown in Fig. 16C, a photoresist mask 96a is formed on a birefringence layer 93. Then, the "unmasked portions of the birefringence layer 93 are removed by etching as shown in FIG. 16D" (page 59, line 24 through page 60, line 2). The mask 96a is then removed (Fig. 16E) and an isotropic overcoat layer 94 is formed. As shown in Figs. 16A-16F, the transparent substrate 92 is *not* etched when the birefringence layer 93 is etched (Fig. 16D). Moreover, as shown in Figs. 19A-19H, the substrate 92 is *not* etched; but, only the birefringence layer 93 is etched (Fig. 19G).

As shown in Figs. 16A and 19A, prior to the birefringent layer 93 being etched, an adhesive layer 95 is used to adhere the layer 93 to the substrate 92. The birefringent layer 93 is then etched while the adhesive layer 95 separates it from the substrate 92. The substrate 92 is not etched. Further, in Fig. 15 and page 56, Applicant provides a formula to calculate optimal birefringence. An important factor in the calculation is "h," which is the depth of the grating pattern (Fig. 15). The depth h is determined by the birefringent layer 93 and not the substrate 92. If portions of the substrate 92 were etched, the depth of the pattern would not be illustrated as such.

Claims 30-42 and 48 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The rejection is respectfully traversed. As indicated above, the original disclosure indicates that the transparent substrate 92 is not etched when the periodic grating pattern is formed.

Claims 30-46 and 48 are rejected under 35 U.S.C. § 112, first paragraph, as being non-enabled. Reconsideration is respectfully requested. With respect to claims 30-46, the Office Action asserts that the specification fails to teach how the “incident reflection beam” is generated. Claims 30 and 43 have been amended to obviate any such concerns. Claims 30 and 43 now recite that an “incident reflection beam [is received] from an optical disk,” to clarify where the incident beam is being generated from. The beam is incident to the polarization hologram but is a reflection beam from the optical disk.

With respect to claim 48, the Office Action asserts that a birefringence property of the birefringence layer, the periodic grating pattern having different refractive indices for two orthogonal polarization directions which diffracts an incident light beam in predetermined diffraction directions depends on the polarization directions of the incident light beam, are all somehow critical or essential to the practice of the invention. There is no evidence, however, in support of the assertion. Consequently, the rejection of claim 48 should be withdrawn. The features suggested by the Office Action are now recited in new independent claim 49, which does not say that the substrate is not etched.

Claims 30-32 and 35-42 are rejected under 35 U.S.C. § 103 as being unpatentable over Takeda '952 in view of Nakamura and Takeda '733. Reconsideration is respectfully requested. Takeda '952 does not disclose or suggest a method of forming

a polarization hologram by patterning a uni-directionally stretched birefringence layer *without etching a substrate* as recited in claim 30. Further, Takeda '952 does not teach or suggest a method of forming a polarization hologram by attaching a uni-directionally stretched birefringence layer to a substrate with an adhesive layer. These are important aspects of the claimed invention. Nakamura and Takeda '733 are relied upon for other features. Therefore, the rejection of claim 30 should be withdrawn.

Moreover, Applicant respectfully submits that there is no motivation to combine the prior art references in the manner suggested in the Office Action. As the Office Action acknowledges, Takeda '952 discloses a thin birefringent film that is formed by rubbing in *one direction*. Nakamura, in contrast, discloses a uniaxially stretched film. One skilled in the art would not look to Nakamura's uniaxially stretched film since Takeda '952 discloses forming a birefringent film by rubbing in one direction. In fact, Takeda '952 specifically relates to forming a birefringent film comprising polydiacetylene by polymerizing it on a glass substrate oriented in the *rubbing* direction. This is an additional reason why the rejection of claims 30 and 48 should be withdrawn.

Claims 31-44, 46, 48 and 49 depend from claim 30, or recite limitations that are similar to one or more of the features discussed above, and should be allowable along with claim 30 and for other reasons. Further, with respect to claims 43 and 44, please note that, since Takeda '952 says that the substrate *and* the birefringent film are both etched, the cited references, even when considered in combination, *cannot* disclose that the depth of a periodic grating pattern is essentially equal to a thickness of a uni-directionally stretched birefringent layer. The depth of the grating pattern in Takeda '952 would be deeper than the thickness of the birefringent film since the transparent

substrate is *also* etched. This is an additional reason for the allowance of claims 43 and 44.

Claim 48 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Iwatsuka in view of Nakamura. The rejection is respectfully traversed. Claim 48 has been amended to obviate the rejection.

Claims 43-46 stand rejected under the judicially created doctrine of obviousness type double-patenting as being unpatentable over claims 1-9 of U.S. Patent No. 6,618,344 ("Funato"). The rejection is respectfully traversed. Applicant respectfully submits that the claims of the present application recite important limitations that are not obvious over the claims of Funato. For instance, claim 1 of Funato recites an *optical pickup apparatus* with "a birefringence layer of a stretched organic polymer material." Claims 2-9 of Funato depend from claim 1. Claim 43 of the present application, in contrast, defines a *polarization hologram* structure and recites "a uni-directionally stretched birefringence layer with a periodic grating pattern comprising organic polymer material affixed to said substrate . . . wherein the depth of said periodic grating pattern is essentially equal to a thickness of said uni-directionally stretched birefringence layer." Claim 1 of Funato does not disclose that the depth of the periodic grating pattern is essentially equal to a thickness of a uni-directionally stretched birefringence layer.

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Allowance of the application with claims 30-44, 46, 48 and 49 is solicited.

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Respectfully submitted,

By 

Mark J. Thronson; Reg. No. 33,082

DICKSTEIN SHAPIRO MORIN &

OSHINSKY LLP

2101 L Street NW

Washington, DC 20037-1526

202-775-4742